

ABSTRACT

A material for use as self-lubricating sliding parts, which consists of a steel containing, by mass, from not less than 0.4 % to less than 1.5 % of C (carbon), 0.1 to 3.0 % of Si, 0.1 to 3.0 % of Mn, from inclusive zero to 0.5 % of Cr, 0.05 to 3.0 % of Ni, 0.3 to 2.0 % of Al, 0.3 to 20 % in total (Mo + W + V) of at least one element selected from the group consisting of Mo, W (tungsten) and V (vanadium), and 0.05 to 3.0 % of Cu, wherein there can be observed graphite particles having an average particle size of not more than 3 μm in a section of the metal structure of the steel. The steel is also used as piston rings. In the steel, the graphite particles observed in the structural section occupy an area rate of not less than 1 % in the overall area of the structural section, and have an average particle size of not more than 3 μm . The steel may further contain not more than 0.3 % of S and/or not more than 0.01 % of Ca. The steel is subjected to nitriding treatment for use.